

## CLAIMS

1  
2           [1] An inspection apparatus for cell reaction, which  
3 is composed of a device for liquid processor comprising  
4       a plate-shaped base material,  
5       a plurality of first micro conduits extending in a  
6 first direction and a plurality of second micro conduits  
7 extending in a second direction different from the first  
8 direction, which are formed in the base material,  
9       micro spaces formed at respective intersections of  
10 the first micro conduits and second micro conduits,  
11       a valve provided in each of the respective micro  
12 conduits linked to the micro spaces, for opening and  
13 closing the micro conduit, and  
14       a valve control mechanism for controlling each of the  
15 valves between closed and opened states,  
16       wherein the apparatus is used in an inspection of a  
17 cell reaction, in which a liquid medium necessary for  
18 survival of living cells is fed through one of micro  
19 conduits linked to a selected micro space, in which the  
20 living cells are placed, and a test liquid containing a  
21 cell stimulator is fed through another micro conduit linked  
22 to the micro space to inspect a cell reaction caused by the  
23 test liquid.

1           [2] An inspection method of a cell reaction, which  
2 comprises using a device for liquid processor comprising  
3       a plate-shaped base material,

4           a plurality of first micro conduits extending in a  
5   first direction and a plurality of second micro conduits  
6   extending in a second direction intersecting with the first  
7   direction, which are formed in the base material,  
8           micro spaces formed at respective intersections of  
9   the first micro conduits and second micro conduits,  
10          a valve provided in each of the respective micro  
11   conduits linked to the micro spaces, for opening and  
12   closing the micro conduit, and  
13          a valve control mechanism for controlling each of the  
14   valves between closed and opened states,  
15          wherein a liquid medium necessary for survival of  
16   cells is fed to a selected micro space, in which the cells  
17   are placed, through one of micro conduits linked to the  
18   micro space, and a test liquid containing a cell stimulator  
19   is fed through another micro conduit linked to the micro  
20   space, thereby inspecting a cell reaction caused.

1           [3] The inspection method of the cell reaction  
2   according to claim 2, wherein the same kind of cells are  
3   placed in a plurality of micro spaces, and different test  
4   liquids containing a cell stimulator are fed to the  
5   plurality of the micro spaces.

1           [4] The inspection method of the cell reaction  
2   according to claim 2, wherein different kinds of cells are  
3   placed in a plurality of micro spaces, and the same test

4 liquid containing a cell stimulator is fed to the plurality  
5 of the micro spaces.

1 [5] An inspection method of a cell reaction, which  
2 comprises using a device for liquid processor comprising  
3 a plate-shaped base material,  
4 a plurality of first micro conduits extending in a  
5 first direction and a plurality of second micro conduits  
6 extending in a second direction intersecting with the first  
7 direction, which are formed in the base material,  
8 micro spaces formed at respective intersections of  
9 the first micro conduits and second micro conduits,  
10 a valve provided in each of the respective micro  
11 conduits linked to the micro spaces, for opening and  
12 closing the micro conduit, and  
13 a valve control mechanism for controlling each of the  
14 valves between closed and opened states,  
15 wherein a first test process that a liquid medium  
16 necessary for survival of cells is fed to a selected micro  
17 space, in which the cells are placed, through one of micro  
18 conduits linked to the micro space, and a first test liquid  
19 containing a cell stimulator is fed through another micro  
20 conduit linked to the micro space, and  
21 a second test process that the opened and closed  
22 states of the valves of the micro conduits linked to the  
23 micro space are changed over after the first test process,  
24 thereby stopping the feed of the first test liquid and

25 feeding a second test liquid different from the first test  
26 liquid, containing a cell stimulator through a feeding  
27 route different from the feeding route for the first test  
28 liquid are conducted, thereby inspecting cell reactions  
29 caused by these test processes.

1 [6] The inspection method of the cell reaction  
2 according to claim 5, wherein the first and second test  
3 liquids contain cell stimulators different in kind or  
4 concentration from each other.

1 [7] The inspection method of the cell reaction  
2 according to claim 5 or 6, wherein the cells placed in the  
3 micro space are cells derived from an internal organ or  
4 organ of an animal, and the cell stimulators contained in  
5 the first and second test liquids are selected from cell  
6 growth factors, cell proliferation factors, hormones,  
7 nutrients and sera.

1 [8] The inspection method of the cell reaction  
2 according to any one of claims 2 to 7, wherein the  
3 inspection of the cell reaction is detection of a  
4 productive substance produced by the cells.

1 [9] An inspection method of a cell reaction, which  
2 comprises using a device for liquid processor comprising  
3 a plate-shaped base material,

4           a plurality of first micro conduits extending in a  
5   first direction and a plurality of second micro conduits  
6   extending in a second direction intersecting with the first  
7   direction, which are formed in the base material,  
8           micro spaces formed at respective intersections of  
9   the first micro conduits and second micro conduits,  
10          a valve provided in each of the respective micro  
11   conduits linked to the micro spaces, for and opening and  
12   closing the micro conduit, and  
13          a valve control mechanism for controlling each of the  
14   valves between closed and opened states,  
15          wherein in an inspection of a cell reaction that a  
16   liquid medium necessary for survival of cells is fed to a  
17   plurality of selected micro spaces, in each of which the  
18   cells are placed, through one of micro conduits  
19   respectively linked to the plurality of the micro spaces,  
20   and a test liquid containing a cell stimulator is fed  
21   through another micro conduits respectively linked to the  
22   plurality of the micro spaces,  
23          a cell reaction product by the first cells is fed to  
24   the second cells.